CLAIMS

What is Claimed is:

5 1. A display illumination distribution system comprising:

a display for displaying an image;

a light pipe for distributing light waves to a display, said light pipe coupled to said display;

a lens for directing light waves into said light pipe, said lens coupled to said light pipe;

a wave guide array for directing said light waves to said lens, said wave guide coupled to said lens; and

a light source for providing said light waves, said light source coupled to said wave guide.

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- 2. The display illumination distribution system of claim 1 wherein said display comprises a protective shield for protecting said display from physical damage; said protective shield coupled to said display.
- 3. The display illumination distribution system of claim 1 wherein the interior walls of each of one of said plurality of wave guides comprise a highly reflective material that reflects said light waves down the length of said wave guide.

4. The display illumination distribution system of claim 1 wherein the said light waves are confined to said wave guide array and are directed to a plurality of points at the edges of said light pipe.

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- 5. The display illumination distribution system of claim 1 wherein said light waves are distributed from said wave guide array so that said light waves form an overlapping grid.
- 10 6. The display illumination distribution system of claim 1 wherein said light pipe is a straight through light pipe.
 - 7. The display illumination distribution system of claim 1 wherein said light pipe includes microstructures:

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- 8. A handheld computer display illumination distribution system comprising:
 - a display for displaying an image;
- a light pipe for distributing illumination light waves to said display,said light pipe coupled to said display;
 - a lens for directing the illumination light waves and sensory light waves, said lens coupled to said light pipe;

a wave guide array for directing the illumination light waves and the sensory light waves to said lens, said wave guide coupled to said lens; and

a light source for providing the illumination light waves and the sensory light waves, said light source coupled to said wave guide.

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- 9. The handheld computer display illumination distribution system of Claim 8 wherein said light source provides non interfering illumination light waves and sensory light waves.
- 10 10. The handheld computer display illumination distribution system of Claim 8 wherein said lens is a plurality of lenses.
 - 11. The handheld computer display illumination distribution system of Claim 8 wherein said plurality of lenses include a distribution lens and culminating lens.
 - 12. The handheld computer display illumination distribution system of Claim 11 further comprising:

a gathering lens for collecting said sensory light waves; and

a light detector for detecting a break in said sensory light waves, said light detector coupled to said gathering lens.

- 13. The handheld computer display illumination distribution system of Claim 11 wherein said sensory light is infrared light.
- 14. The handheld computer display illumination distribution system of
 5 Claim 11 wherein said illumination light is visible white light from a light emitting diode.

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- A display illumination distribution method comprising the steps of emitting light from a light source; directing the emitted light in a wave guide; propagating the light waves through a lens into a light pipe; and conveying the light to a display.
- The display illumination distribution method of Claim 15 furthercomprising the step of reflecting light waves off the walls of the wave guide.
 - 17 The display illumination distribution method of Claim 15 further comprising the steps of:

emitting a portion of said light waves from said light pipe; and

conveying another portion of said light waves down said light pipe for emission at a different location in the light pipe.

- The display illumination distribution method of Claim 15 in which two different types of light are emitted including a sensory light and a visible light.
- 5 19 The display illumination distribution method of Claim 18 further comprising the steps of:

gathering said sensory light waves in a gathering lens; and conveying said sensory light waves to a light sensor via a wave guide.

10 20 The display illumination distribution method of Claim 19 further comprising the step of detecting breaks in the sensory light.